

**UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF TENNESSEE
NASHVILLE DIVISION**

SIERRA CLUB,)	
)	
)	
Plaintiff,)	Case No. _____
)	
v.)	
)	
)	COMPLAINT
TENNESSEE VALLEY AUTHORITY,)	
)	
Defendant.)	For Declaratory and Injunctive Relief

INTRODUCTION

1. This litigation arises from a decision by Defendant Tennessee Valley Authority (“TVA”) to build a new gas-fired power plant in Middle Tennessee without fairly evaluating the significant impacts its decision will have on the climate and power customers alike. TVA’s failure to adequately consider these issues and others violates the National Environmental Policy Act (“NEPA”), 42 U.S.C. § 4321 *et seq.*

2. The new power plant is called the Johnsonville Aeroderivative Combustion Turbines Project (“Aero CTs Project”), and it would be located in Humphreys County on the bank of Kentucky Lake at an existing TVA site called the Johnsonville Reservation. The project involves building ten new gas-fired aeroderivative combustion turbines (“Aero CTs”), which operate like jet engines that burn natural gas to produce electricity. Natural gas is a fossil fuel primarily comprised of methane. Burning methane releases carbon dioxide, the greenhouse gas driving the global climate crisis. Methane itself, which leaks or is intentionally vented directly to the atmosphere as it moves through the gas infrastructure system, is another potent greenhouse

gas contributing to climate change.

3. Building a new gas-fired power plant like the Aero CTs Project carries serious risks for the environment and for consumers. Even as the harmful impacts of the global climate crisis grow more apparent, the Aero CTs Project would emit over one million tons of planet-warming climate pollution each year over its several decades of operation unless forced to retire early or install expensive technology to capture and store its greenhouse gas emissions. Those costs and others are passed on to captive customers who get their electricity from local non-profit distributors that TVA locks into automatically-extending contracts to protect its bottom line.

4. TVA is the nation's largest federally owned electric utility and is ideally positioned to lead our nation's response to the climate crisis with investments in clean, carbon-free resources like energy efficiency, solar, and battery storage.

5. Instead, TVA is on the precipice of a significant and long-term commitment to fossil fuels and greenhouse gas emissions across its fleet, proposing almost 5,000 megawatts of new gas plants since early 2021.

6. The Aero CTs Project is emblematic of TVA's myopic approach to the climate crisis.

7. In July of 2022, TVA issued an environmental assessment under NEPA purporting to evaluate the environmental consequences of the Aero CTs Project. But TVA failed to fairly evaluate the things that matter, including the significant climate change impacts of the project, the viability of a carbon-free alternative, and the stark conflict between United States climate policy and TVA's plan. These failures and others violated NEPA.

8. Plaintiff Sierra Club asks this Court to hold unlawful and set aside TVA's deficient NEPA analysis and enjoin further construction and operation of the Aero CTs Project.

JURISDICTION AND VENUE

9. The Court has jurisdiction over this civil action under 28 U.S.C. § 1331 (federal question jurisdiction), and judicial review is available under the Administrative Procedure Act, 5 U.S.C. §§ 701–706.

10. An actual controversy exists between the parties within the meaning of the Declaratory Judgment Act, 28 U.S.C. § 2201(a), and the Court may grant declaratory relief, injunctive relief, and further relief pursuant to 28 U.S.C. §§ 2201–2202 and 5 U.S.C. § 706.

11. Venue is proper in this district under 28 U.S.C. § 1391(b) because the Johnsonville Reservation is in this district and a substantial part of the events or omissions giving rise to the claim occurred here.

PLAINTIFF SIERRA CLUB

12. Plaintiff Sierra Club is the nation’s oldest and largest grassroots environmental organization. The Sierra Club is a national nonprofit organization of nearly 730,000 members dedicated to exploring, enjoying, and protecting the wild places of the Earth; to practicing and promoting the responsible use of the Earth’s ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to using all lawful means to carry out these objectives. The Sierra Club has approximately 8,208 members in Tennessee. The Sierra Club brings this action on its own behalf and on behalf of its members.

13. The Sierra Club has long been concerned about environmental issues in the Tennessee Valley, including impacts from the power sector such as land use, air and water pollution, and climate change. The Sierra Club advocates for a clean-energy transition for TVA and other utilities nationwide to reduce or eliminate climate-warming emissions and provide affordable renewable energy and clean jobs. To advance these goals, the Sierra Club routinely participates in the administrative processes for proposed TVA projects—including but not limited

to new power plants—and encourages TVA to pursue carbon-free alternatives to fossil fuels such as solar and wind generation, battery storage, energy efficiency programs, and more. The Sierra Club also advocates for a clean-energy portfolio during the development every several years of TVA's integrated resource plan, a statutorily mandated, forward-looking process in which TVA is supposed to make decisions about its future power supply that are intended to guide project-level decision making. The Sierra Club uses the information it obtains through project-level NEPA documents to shape and support its advocacy about the choices TVA is tasked with making during integrated resource planning. Consistent with its past practice, the Sierra Club intends to advocate for clean energy during the development of TVA's next integrated resource plan, a process that is expected to begin by 2024. The Sierra Club also depends on the information it obtains through project-level NEPA documents to effectively carry out public outreach and education campaigns; advocate for clean energy policies to federal, state, and local governmental entities and elected officials; and to inform expert analyses of TVA's resource decisions.

14. TVA's failure to adequately evaluate the impacts from the Aero CTs Project under NEPA and consider a reasonable range of alternatives to building a new gas-fired power plant directly harms the Sierra Club's ability to achieve its organizational goal of advancing a clean-energy transition in the Tennessee Valley. Specifically, TVA deprived the Sierra Club and its members of information and analysis the Sierra Club would use during the development of TVA's next integrated resource plan to advocate for a clean energy future instead of anachronistic reliance on fossil fuels. TVA's failure to comply with NEPA for the Aero CTs Project also impairs the Sierra Club's ability to conduct the public outreach and advocacy campaigns that are central to its work in Tennessee. TVA's failure to adequately evaluate the impacts of the Aero CTs Project forces Sierra Club to choose between going without important information that TVA

should have provided or attempting to obtain that information from other sources such as expert analyses at Sierra Club's expense.

15. For example, partly because TVA failed to evaluate a reasonable range of alternatives for the Aero CTs Project, Sierra Club hired Synapse Energy Economics and spent money and staff time developing a report to evaluate clean-energy alternatives to new gas plants for TVA's system.

16. TVA's failure to adequately evaluate the impacts from the Aero CTs Project under NEPA and consider a reasonable range of alternatives to building a new gas-fired power plant also harms individual Sierra Club members like Gary Bullwinkel, who owns property near the Johnsonville Reservation. Members like Mr. Bullwinkel have concrete recreational, aesthetic, health, and economic interests that are threatened by the plan TVA selects in its environmental assessment and finding of no significant impact—the Aero CTs Project—and that NEPA's procedures are intended to protect. Mr. Bullwinkel owns and frequently visits a family vacation home just across Kentucky Lake from the Johnsonville Reservation and plans to continue for many years to come. Mr. Bullwinkel has visited that home since he was a child and usually goes there for several days between ten and twenty times per year. He particularly enjoys swimming there. The noise and visual impacts from the construction and operation of the Aero CTs will impair his recreational and aesthetic interests in his use and enjoyment of the area around the Johnsonville Reservation.

17. Furthermore, Mr. Bullwinkel's recreational and health interests are also harmed because the Aero CTs will emit air pollution, including fine particulates and nitrogen oxides, a precursor to ground-level ozone, or smog. These pollutants are not harmless even in low concentrations. TVA and the Tennessee Department of Environment and Conservation predict

that emissions from the Aero CTs will reach Mr. Bullwinkel's vacation home, exposing him to injurious air pollution, forcing him to worry about whether he is being exposed at a given time, and impairing his enjoyment of the area.

18. Finally, the Aero CTs Project harms the economic interests of Mr. Bullwinkel because he is a customer of a local power company that buys electricity from TVA and sells it to its own customers in turn. The costs associated with TVA's generation choices like the decision to build the Aero CTs Project are ultimately passed to individual customers like this Sierra Club member. Gas-fired power plants like the Aero CTs Project subject power customers to increased economic risk compared to clean-energy alternatives. For example, the price of fuel for power plants like the Aero CTs Project—primarily methane—is expensive and volatile. TVA reported in an August 2022 Board of Directors meeting that the volatility of gas prices becomes a greater risk as gas-fired generation becomes a larger portion of its portfolio. Since TVA passes its fuel costs directly to customers, it is TVA's customers who are forced to bear this economic risk, which is exacerbated by TVA's decision to invest in new gas plants including the Aero CTs Project. Furthermore, investing in a gas-fired power plant today entails the significant economic risk that foreseeable climate change mitigation requirements will cause the plant to retire before it is fully depreciated, force it to install expensive technology to capture and store the plant's greenhouse gas emissions, or both. Those costs ultimately will be borne by customers like Mr. Bullwinkel.

19. The harm and injuries suffered by the Sierra Club and its members can and should be redressed by a judgment declaring unlawful and vacating the NEPA documents for the Aero CTs Project and enjoining further construction or operation of the Aero CTs until TVA complies with NEPA. TVA's failure to fairly evaluate the impacts of the Aero CTs Project, consider a reasonable range of alternatives, and prepare an environmental impact statement are directly

connected to a decision to proceed with the Aero CTs Project. An order from this Court requiring TVA to comply with NEPA may lead the agency to abandon or modify the project. Individual participation of Sierra Club members is not necessary to evaluate TVA's compliance with NEPA or to provide prospective or injunctive relief.

20. The Sierra Club participated actively in the administrative process for the Aero CTs Project and has exhausted administrative remedies for the NEPA violations alleged in this action. The Sierra Club submitted comments to TVA along with other organizations on February 8, 2022, detailing the numerous ways in which TVA's draft environmental assessment failed to adequately consider the environmental impacts of the project, including climate impacts, and failed to consider a carbon-free alternative. The Sierra Club and other organizations also wrote letters to TVA seeking an extended comment period and supplementation under NEPA based on information that was not originally made available to the public, which TVA refused.

DEFENDANT TENNESSEE VALLEY AUTHORITY

21. Defendant TVA is a federally owned electric utility corporation that operates the nation's largest public power system. TVA is a corporate agency and instrumentality of the United States created by and existing pursuant to the Tennessee Valley Authority Act of 1933 ("TVA Act"), 16 U.S.C. § 831 *et seq.* Members of TVA's Board of Directors are appointed by the President.

22. TVA is an unusual agency. Unlike most other federal agencies, TVA receives no federal funding and derives virtually all its revenues—which exceed \$10 billion annually—from generating and selling electricity. TVA supplies power to a population of nearly ten million people across seven states, primarily through contracts with non-profit local distributors like municipal power companies and member-owned rural cooperatives, which in turn distribute the

electricity to residential, commercial, and industrial customers within their service areas. TVA also sells power directly to large industrial customers.

23. TVA is also an unusual electric utility. Unlike its private counterparts, TVA is largely free from regulatory oversight or market influence. TVA's decisions are not subject to scrutiny by a public utility commission. TVA does not have shareholders to which its Board of Directors is accountable. And TVA shields itself from market forces by using its position to pressure local distributors into signing anticompetitive, exclusive long-term contracts that require twenty years' notice to terminate and automatically extend each year, such that the commitment never erodes with the passage of time. TVA also consistently refuses to allow access to its transmission grid to third parties, erecting an additional obstacle for municipal power companies or rural cooperatives to receive power from providers other than TVA.

24. TVA is, however, bound by federal laws, including NEPA, and is subject to judicial review under the Administrative Procedure Act and the TVA Act, which provides that TVA "[m]ay sue or be sued in its corporate name." 16 U.S.C. § 831c(b).

25. TVA maintains its headquarters in Knoxville, Tennessee.

NATIONAL ENVIRONMENTAL POLICY ACT

26. NEPA is often called the Magna Carta of environmental laws. For over fifty years, the statute has been our country's basic national charter for the protection of the environment.

27. NEPA establishes a national policy to encourage "productive and enjoyable harmony" between humans and the environment; promote efforts to "prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare" of humankind; and "enrich the understanding of the ecological systems and natural resources important to the Nation." 42 U.S.C. § 4321.

28. In pursuit of these goals, NEPA mandates a set of action-forcing procedures that require all federal agencies to take a hard look at the environmental consequences of their proposed actions and disclose the relevant information to the public. Although NEPA's requirements are procedural, "these procedures are almost certain to affect the agency's substantive decision." *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989).

29. NEPA and its implementing regulations require federal agencies to provide a detailed statement on proposals for major federal actions significantly affecting the quality of the human environment. 42 U.S.C. § 4332(C); 40 C.F.R. § 1500.1(a).

30. This detailed statement—called an environmental impact statement ("EIS")—must describe the environmental impact of the proposed action, any adverse environmental effects which cannot be avoided if the proposal is implemented, alternatives to the proposed action, the relationship between local short-term uses and the maintenance and enhancement of long-term productivity, and any irreversible and irretrievable commitments of resources that would be involved in the proposed action if implemented. 42 U.S.C. § 4332(C).

31. If an agency cannot readily discern whether the effects of a proposed action will be significant and thus require the agency to prepare an EIS, the agency may first prepare an environmental assessment ("EA"). An EA is a concise public document used to determine whether the agency must prepare an EIS or whether, alternatively, the agency may issue a finding of no significant impact ("FONSI"). 40 C.F.R. § 1508.1(h).

32. Although an EA is less rigorous than an EIS, an agency preparing an EA must still take a hard look at the environmental impacts of its proposed action and consider a reasonable range of alternatives to any proposal that involves unresolved conflicts concerning alternative uses of available resources. 42 U.S.C. § 4332(E). An EA must "briefly discuss the purpose and

need for the proposed action,” evaluate alternatives to the proposed action, and discuss “the environmental impacts of the proposed action and alternatives.” 40 C.F.R. § 1501.5(c)(2).

33. NEPA requires agencies to analyze and disclose the direct, indirect, and cumulative effects of the proposed action and alternatives to the proposed action. 40 C.F.R. §§ 1508.1(g), 1501.5(c), 1502.16(a)(1).

34. If there is a substantial possibility that the proposed action *may* have a significant impact on the environment, an EIS is required. *See* 40 C.F.R. § 1508.1(b).

35. If an agency decides not to prepare an EIS for a major federal action and instead issues a FONSI, the agency must supply a convincing statement of reasons to justify its conclusion that its action will not have significant impacts. 40 C.F.R. § 1508.1(l).

TVA ACT

36. TVA is authorized to “produce, distribute, and sell electric power.” 16 U.S.C. § 831d(1).

37. Since 1992, TVA has been required to implement a “least-cost planning program.” This statutory mandate requires TVA to engage in “a planning and selection process for new energy resources which evaluates the full range of existing and incremental resources (including new power supplies, energy conservation and efficiency, and renewable energy resources) in order to provide adequate and reliable service to electric customers of the Tennessee Valley Authority at the lowest system cost.” 16 U.S.C. § 831m-1(b)(1). The term “system cost” means “all direct and quantifiable net costs for an energy resource over its available life, including the cost of production, transportation, utilization, waste management, [and] environmental compliance.” 16 U.S.C. § 831m-1(b)(3). Finally, TVA in its planning process must “treat demand and supply resources on a consistent and integrated basis.” 16 U.S.C. § 831m-1(b)(2)(C).

38. In 2004, Congress amended the TVA Act to provide that TVA's "objectives and missions" include "being a national leader in technological innovation, low-cost power, and environmental stewardship." 16 U.S.C. § 831a(b)(5).

GLOBAL CLIMATE CRISIS AND FEDERAL RESPONSE

39. The climate is changing at an unprecedented rate.

40. The United States and the world are warming, global sea level is rising, the oceans are acidifying, and extreme weather events like heatwaves, droughts, and heavy precipitation are becoming more frequent and more severe. The years 2013 through 2021 are nine of the ten warmest years ever recorded, and 2022 is very likely to be consistent with this pattern.

41. There is overwhelming scientific consensus that these changes are driven by fossil fuel extraction, transportation, and combustion, which causes greenhouse gases like carbon dioxide and methane to accumulate in the atmosphere and increase global temperatures. Each source of fossil fuel combustion contributes to climate change, and fossil-based power plants are among the largest individual sources of greenhouse gas emissions in the world. In addition to their smokestack emissions of carbon dioxide, gas-fired power plants are part of a gas infrastructure system that leaks or intentionally vents significant quantities of methane directly into the atmosphere. Electric power generation using fossil fuels accounts for twenty-five percent of the United States' greenhouse gas emissions.

42. The greenhouse gas emissions from TVA's existing coal- and gas-fired power plants are contributing to climate change, and the greenhouse gas emissions from TVA's proposed new gas-fired power plants, like the Aero CTs Project, will also contribute to climate change.

43. The effects of climate change are already manifest in Tennessee and are predicted

to grow more severe as temperatures continue to rise. Extreme rainfall events have increased in frequency and severity in the Southeast and are expected to increase further. In the Tennessee Valley, the years 2018–2020 were the wettest years in 131 years of record keeping, and 2020 set the single-year record with rainfall 139 percent above normal. Last year in Humphreys County, where the Johnsonville Reservation is located, 17 inches of rain fell in a single day, causing catastrophic flooding that killed twenty people and damaged or destroyed hundreds of homes and businesses.

44. Limiting the global increase in temperatures to 1.5 degrees Celsius (“1.5°C”) above pre-industrial levels would reduce the risks and impacts from climate change.

45. Recent scientific studies show that global warming beyond 1.5°C could trigger climate tipping points. Climate tipping points are thresholds that trigger self-perpetuating changes in the climate, which may lead to dangerous impacts that occur abruptly and irreversibly.

46. Any additional increase in greenhouse gas emissions from fossil fuels concomitantly increases the likelihood that an increase in global temperatures will exceed 1.5°C above pre-industrial levels. Scientists estimate that global emissions must fall by approximately forty-five percent by 2030 and reach net-zero by 2050 to limit warming to 1.5°C. Global emissions are not on a trajectory that will meet these goals.

47. The United States must reduce its consumption of fossil fuels for global warming to stay below 1.5°C.

48. Recent Executive Orders direct all federal agencies to take a government-wide approach to combating the climate crisis. This government-wide approach includes TVA.

49. Executive Order 13990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis* (Jan. 20, 2021), calls on federal agencies to

“capture the full costs of greenhouse gas emissions as accurately as possible, including by taking global damages into account.” The Executive Order requires agencies to apply the Social Costs of Carbon and Methane—tools designed to account for the economic impacts of climate change—in accordance with guidance from the Interagency Working Group on the Social Cost of Greenhouse Gases.

50. Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad* (Jan. 27, 2021), acknowledges that “we face a climate crisis that threatens our people and communities, public health and economy, and, starkly, our ability to live on planet Earth.” The Executive Order directs that the federal government “must drive assessment, disclosure, and mitigation of climate pollution and climate-related risks in every sector of our economy,” and that the Administration will “organize and deploy the full capacity of its agencies to combat the climate crisis to implement a Government-wide approach that reduces climate pollution in every sector of the economy.” The Executive Order also requires the federal government to develop “a comprehensive plan” to use “all available procurement authorities to achieve or facilitate . . . a carbon pollution-free electricity sector no later than 2035.”

51. Executive Order 14057, *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability* (Dec. 8, 2021), declares a policy for the federal government “to lead by example in order to achieve a carbon pollution-free electricity sector by 2035 and net-zero emissions economy-wide by no later than 2050.” To implement this policy, Executive Order 14057 further directs that agencies—including government-owned corporations—“shall facilitate new carbon pollution-free electricity generation and energy storage capacity” on government-owned property.

52. In 2022, Congress enacted the Inflation Reduction Act (“IRA”), Pub. L. 117-169,

which has been heralded as “the single largest and most ambitious investment in the ability of the United States to advance clean energy, cut consumer energy costs, confront the climate crisis, promote environmental justice, and strengthen energy security.” Executive Order 14082, *Implementation of the Energy and Infrastructure Provisions of the Inflation Reduction Act of 2022* (Sept. 12, 2022). Among its other provision, the IRA creates billions of dollars of incentives for deploying clean energy technology. TVA is eligible for many of these incentives. To implement the IRA, Executive Order 14082 directs federal agencies—including government-owned corporations—to “driv[e] progress to . . . achieve a carbon pollution-free electricity sector by 2035,” and “promot[e] construction of clean energy generation, storage, and transmission[.]”

TVA’S FLEET AND RESOURCE PLANNING

53. TVA relies heavily on burning fossil fuels, primarily coal and gas, to generate electricity.

54. Fossil fuels account for almost half of TVA’s power supply. In addition to burning fossil fuels like coal and gas, TVA also produces electricity with nuclear power plants, hydroelectric dams, and a very limited amount of wind and solar. In 2022, coal and gas combined to account for approximately 48% of TVA’s power supply, while wind and solar accounted for roughly 4%.

55. TVA’s gas-fired fleet uses two basic types of technology: simple-cycle combustion turbines and combined-cycle units. A simple-cycle combustion turbine is essentially a jet engine that burns gas to produce electricity. A combined-cycle unit initially employs a gas-fired combustion turbine to produce electricity, and then recovers waste heat from the combustion turbine exhaust to generate steam, which in turn powers a steam turbine that generates additional electricity.

56. As of September 2022, TVA operates 81 active simple-cycle combustion turbines at nine power plant sites, 14 active combined-cycle units at eight sites, and a single cogeneration unit that burns gas to produce electricity and also to generate steam for sale to an industrial customer.

57. Under the TVA Act's mandate to implement a least-cost planning program, 16 U.S.C. § 831m-1(b)(1), TVA prepares a comprehensive study every few years that provides the utility's view on how best to meet future electricity demand over the next two decades. This study is called an Integrated Resource Plan ("IRP"). TVA issued its most recent IRP in 2019.

58. The 2019 IRP contains notably few actual decisions about TVA's future operations. Instead, TVA largely decided not to decide. The 2019 IRP identified a wide range of future scenarios and recommended that TVA retain maximum flexibility by deferring most resource decisions to a later date. For example, the 2019 IRP contemplates that TVA might retire 2,000 megawatts of combustion turbine capacity by 2028 or alternatively might add up to 5,200 megawatts of combustion turbine capacity over the same period. Likewise, the 2019 IRP contemplates that TVA could add between 800 and 9,800 megawatts of new combined-cycle capacity by 2038.

59. TVA prepared a programmatic EIS for the 2019 IRP. In that EIS, TVA expressly recognized that "[t]he more site-specific effects of actions that are later proposed to implement the IRP will be addressed in subsequent tiered environmental reviews." The EIS also expressly declined to consider the cumulative impacts of site-specific decisions to implement the 2019 IRP, instead deferring that analysis to future reviews of site-specific actions.

60. In Fiscal Year 2019, TVA completed a study of its combustion turbine fleet called the CT Modernization Study. The CT Modernization Study was not itself a NEPA document and

was not accompanied by any NEPA analysis.

61. The CT Modernization Study evaluated the condition of TVA's simple-cycle combustion turbines and provided recommendations on which to maintain, which to refurbish, and which to retire and replace. The CT Modernization Study also recommended that TVA add approximately 500–650 megawatts of new combustion turbine capacity in the form of aircraft-inspired technology called aeroderivative combustion turbines ("Aero CTs"). The CT Modernization Study reasoned that building new Aero CTs would enhance the flexibility of TVA's system, help TVA integrate renewables such as solar, and provide capacity that could be quickly dispatched to respond to periods of high demand for electricity. The CT Modernization Study recommended building these new Aero CTs on an existing TVA site in Humphreys County called the Johnsonville Reservation.

62. TVA adopted the CT Modernization Study and 2019 IRP at its August 2019 Board meeting.

63. Also during that meeting, the TVA Board approved the use of a new long-term contract between TVA and its non-profit distributors. One purpose of this long-term contract is to fund TVA's capital spending over the next decade—a significant percentage of which is projected to be on new gas-fired power plants.

64. Despite the urgent climate crisis and sweeping federal policies to combat that crisis, TVA is planning a massive buildout of gas-fired power plants.

65. Since June 2021, TVA has proposed or approved 4,950 megawatts of new gas generation across its fleet to replace aging fossil units or add capacity.

66. TVA claims publicly that it is not required to comply with the executive orders on decarbonizing the power sector by 2035. Instead, TVA has set its own, less ambitious target of

achieving a 70% reduction in carbon emissions by 2030, with a plan to achieve an 80% reduction by 2035 and an aspirational goal to achieve net-zero emissions by 2050.

JOHNSONVILLE AERO CTS

67. In January 2022, TVA issued a Draft EA for a proposed project to construct and operate ten new Aero CTS on the Johnsonville Reservation. The project is called the Johnsonville Aeroderivative Combustion Turbines Project (defined above as the “Aero CTS Project” for purposes of this Complaint).

68. The Aero CTS Project would add 550 megawatts of additional capacity to TVA’s system. In other words, the project would not replace capacity from retiring units, but would instead add all new capacity.

69. The Draft EA described the purpose and need for the Aero CTS Project by reference to the recommendations of the CT Modernization Study and the direction of the 2019 IRP. The Draft EA claimed that “[t]he Aero CTS are needed to ensure TVA maintains a reliable peaking fleet and would enhance system flexibility by facilitating the integration of intermittent renewable resources.”

70. The Draft EA identified the Aero CTS Project as TVA’s preferred action. The only other alternative studied in the Draft EA was a “no action” alternative.

71. Plaintiff Sierra Club submitted timely comments on the Draft EA along with other organizations, explaining that the Draft EA violated NEPA because, among other things, it failed to consider a reasonable range of alternatives including a carbon-free alternative, failed to address whether additional capacity would actually be needed, failed to take a hard look at the climate change impacts of building new gas-fired generating units, failed to adequately address the cumulative impact of the Aero CTS Project in conjunction with the rest of TVA’s planned gas

buildout, failed to address conflicts between TVA’s gas buildout and Executive Order 14008 and 14057 and the likelihood that the Aero CTs Project would require expensive carbon pollution mitigation or face early retirement, failed to employ available metrics for evaluating the environmental impact of additional greenhouse gas emissions called the Social Cost of Carbon and Social Cost of Methane, and failed to prepare an EIS even though the Aero CTs Project is likely to have significant impacts.

72. On June 30, 2022, the United States Environmental Protection Agency (“EPA”) sent TVA decisionmakers comments on a TVA proposal for another gas-fired power plant. For the deficiencies described above, among others, EPA “strongly recommend[ed]” that TVA revise its climate analysis, reconsider a reasonable range of clean-energy alternatives, and select an alternative other than the proposed gas-fired power plant.

73. On July 12, 2022, TVA issued a Final EA and FONSI concluding that the Aero CTs Project would not have a significant impact requiring preparation of an EIS.

74. The Final EA largely repeated the NEPA violations of the Draft EA.

75. The Final EA defined the purpose and need for the Aero CTs Project by reference to the CT Modernization Study. To the extent the Final EA offered a purpose and need that was not limited to implementing the CT Modernization Study, the Final EA indicated that the purpose and need for the project is to maintain a reliable peaking fleet, enhance system flexibility, and facilitate the integration of intermittent renewable resources like wind and solar.

76. The Final EA did not evaluate a reasonable range of alternatives, including a carbon-free alternative. Instead, it presented a false choice between the Aero CTs Project and a “no action” alternative. The Final EA identified proceeding with the Aero CTs Project as TVA’s preferred alternative.

77. The Final EA did not take a hard look at the climate change impacts of the Aero CTs Project individually or cumulatively in conjunction with the rest of TVA's foreseeable gas buildout. The Final EA applied a proxy analysis whereby it described the project emissions from the Aero CTs as a percentage of state, national, and global greenhouse gas emissions. Although the Final EA acknowledged the unprecedented impacts of climate change and the role that fossil fuel combustion plays in driving the climate crisis, the Final EA concluded that climate impacts from the Aero CTs Project would not be significant because the anticipated emissions are small in comparison to the scale of global climate change. The Final EA also provided a table applying different valuations for the Social Cost of Carbon for comparative purposes but disclaimed any reliance on the metric.

78. To the extent TVA included a Social Cost of Carbon analysis, the Final EA's application of this metric directly conflicted with applicable guidance from the Interagency Working Group on the Social Cost of Greenhouse Gases. The Final EA applied Social Cost of Carbon figures that include a 7% discount rate and exclude global damages, conflicting with guidance from the Interagency Working Group's Technical Support Document. The Final EA did not apply three other values—including a 2.5% discount rate and a high-climate-damages value—the Interagency Working Group advised. The Final EA omitted application of the Social Cost of Methane, despite a large body of evidence that methane emissions are a critical problem for climate change. The Final EA provided only Social Cost of Carbon figures for "the entire TVA-wide power system" over an arbitrary twenty-year period—rather than the full Social Cost of Greenhouse Gases for the proposed Aero CTs during their projected useful life.

79. The Final EA and FONSI did not provide a sufficient basis to conclude that climate impacts from the Aero CTs Project will not be significant.

80. The Final EA did not take a hard look at TVA's obligation to consider emissions mitigation technology to comply with the decarbonization policy in Executive Orders 14008 and 14057 or how this decarbonization policy will affect the operation of the Aero CTs in the future.

CLAIMS FOR RELIEF

Claim One – Failure to Adequately Analyze the Climate Consequences of the Aero CTs Project

81. All allegations stated above are incorporated herein by reference.

82. NEPA requires federal agencies to take a hard look at the environmental impacts of their proposed actions.

83. NEPA requires agencies to analyze and disclose the direct, indirect, and cumulative effects of their proposed actions and alternatives to those proposed action. 40 C.F.R. §§ 1508.1(g), 1501.5(c), 1502.16(a)(1).

84. NEPA requires that agencies must consider a “no action” alternative as a baseline and characterize that baseline accurately. The “no action” alternative is the *status quo ante* in the absence of the proposed action.

85. Cumulative effects are effects on the environment that result from the incremental effects of the action when added to the effects of other past, present, and reasonably foreseeable actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time. 40 C.F.R. § 1508.1(g)(3).

86. Interim guidance from the Council on Environmental Quality (“CEQ”) recommends that agencies use projected greenhouse gas emissions to assess potential climate change effects under NEPA.

87. A statement that emissions from a proposed federal action are small in comparison

to state, national, or global emissions is essentially a statement about the nature of the climate crisis and is not an appropriate basis for deciding whether or to what extent an agency must consider climate change impacts under NEPA. For the same reason, these comparisons are also not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and mitigations.

88. If an agency decides not to prepare an EIS for a major federal action and instead issues a FONSI, the agency must supply a convincing statement of reasons to justify its conclusion that its action will not have significant impacts. 40 C.F.R. § 1508.1(*l*).

89. The Final EA states that the Aero CTs Project will result in a total increase of 1,141,195 tons of carbon dioxide equivalent (“CO₂e”) greenhouse gas emissions each year.

90. The Final EA acknowledges that climate change is causing a wide range of impacts across the United States and the world and that these changes are driven in part by combustion of fossil fuels.

91. The Final EA evaluated the climate change impacts of the Aero CTs Project solely by reference to a proxy analysis that compared the project’s annual greenhouse gas emissions to state, national, and global greenhouse gas emissions. The Final EA concluded that since those percentages are relatively small, “the operation of the proposed Aero CTs and the emergency generator would represent a less than significant contribution to state, national, and global [greenhouse gas] emissions.”

92. By failing to evaluate climate change impacts beyond these facile comparisons, the Final EA failed to take a hard look at the climate change impacts of the Aero CTs Project.

93. The Final EA failed to take a hard look at the climate change impacts of the Aero CTs Project because the Final EA failed to analyze whether the proposal was consistent with

federal climate policy, including the 2035 decarbonization goal in Executive Orders 14008 and 14057.

94. The Final EA failed to take a hard look at the climate change impacts of the Aero CTs Project because the Final EA refused to evaluate lifecycle emissions from the project, including upstream emissions of methane from leaks and intentional venting.

95. The Final EA failed to take a hard look at the climate change impacts of the Aero CTs Project because the Final EA unreasonably applied the Social Cost of Carbon to hide, not capture, climate costs. Contravening Executive Order 13990, the Final EA's analysis conflicts with guidance from the Interagency Working Group on the Social Cost of Greenhouse Gases. Without basis in science or law, the Final EA provides estimates that are based on a 7% discount rate and exclude global damages. The Final EA fails to apply the Interagency Working Group's 2.5% discount rate and high-climate-damages value. The Final EA obscures the Aero CTs Project's impacts by providing only system-wide estimates over an arbitrary twenty-year time period, rather than the Aero CTs Project's impacts over the Aero CTs' projected useful life.

96. The Final EA also failed to take a hard look at the climate change impacts of the Aero CTs Project because the Final EA employed an incorrect and internally inconsistent "no action" alternative as a baseline to measure the greenhouse gas emissions of the Aero CTs Project. For example, the Final EA states in one place that the "no action" alternative would cause no "operational change in [greenhouse gas] emissions." But just a few pages later, the Final EA states that the "no action" alternative "assumes that an equivalent amount of generation" would have to be supplied from other units in TVA's combustion turbine fleet, and provides a table forecasting that the "no action" alternative would actually *increase* greenhouse gas emissions compared to the Aero CTs Project. This inaccurate and inconsistent articulation of the "no action" alternative

makes it impossible for TVA and the public to evaluate the greenhouse gas impacts of the proposed action.

97. The Final EA failed to take a hard look at the climate change impacts of the Aero CTs Project because it refused to consider the cumulative effects of the project in conjunction with TVA's foreseeable gas buildout. The Final EA arbitrarily cabins its cumulative impacts analysis to the immediate vicinity of the Johnsonville Reservation, even though TVA's own actions outside the vicinity of the Johnsonville Reservation are reasonably foreseeable. Further, the Final EA treats the geographic scope of its cumulative impacts analysis inconsistently. In some places, the Final EA expressly disclaims any obligation to consider impacts from TVA gas buildout projects outside the vicinity of the Johnsonville Reservation. In other places, the Final EA claims speculative, system-wide future actions when articulating the supposed benefits of the Aero CTs Project.

98. TVA's failure to take a hard look at the climate change impacts of the Aero CTs Project in the Final EA violated NEPA and was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A).

99. TVA's decision to issue a FONSI for the Aero CTs Project without providing a convincing statement of reasons to justify its conclusion that the climate change impacts from the project will be insignificant was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A).

100. Accordingly, the Final EA and FONSI for the Aero CTs Project must be held unlawful and set aside. 5 U.S.C. § 706(2).

**Claim Two – Failure to Adequately Address Greenhouse Gas Mitigation in
Light of Executive Orders to Decarbonize the Power Sector**

101. All allegations stated above are incorporated herein by reference.

102. An agency's obligation under NEPA to take a hard look at the environmental consequences of a proposed action requires the agency to consider all relevant factors.

103. An agency fails to take a hard look under NEPA when it ignores an important aspect of the problem.

104. TVA is a federal agency and must implement applicable executive orders to the extent permitted by law.

105. When an agency considers its compliance with executive orders in a NEPA document, the agency must do so in a way that is not arbitrary and capricious.

106. The Final EA failed to take a hard look at the Aero CTs Project because it failed to consider an important aspect of the problem: its obligation to consider emissions mitigation technology to comply with federal climate policy in Executive Orders 14008 and 14057.

107. Executive Orders 14008 and 14057 set federal policy to decarbonize the electricity sector by 2035. Executive Order 14082 confirms this policy.

108. No federal agency is in a better position to contribute to the decarbonization of the electricity sector than TVA, the nation's largest federally owned electric utility.

109. The Aero CTs will continue to operate and emit greenhouse gases for as much as two decades beyond 2035.

110. The Final EA does not examine how the decarbonization policy of Executive Orders 14008 and 14057 will affect the operation of the Aero CTs in the future.

111. Although the Final EA acknowledges the existence of Executive Orders 14008 and 14057, the Final EA does not examine the availability, feasibility, or cost of emissions mitigation technology, like carbon capture and sequestration, to decarbonize the operation of the Aero CTs in 2035 and beyond.

112. Greenhouse gas emissions mitigation is a relevant factor and an important aspect of the problem that the Final EA was required to consider under NEPA, particularly in light of Executive Orders 14008 and 14057.

113. TVA's failure to take a hard look at greenhouse gas emissions mitigation for the Aero CTs Project and examine how the decarbonization policy of Executive Orders 14008 and 14057 will affect future operation of the Aero CTs in the Final EA violated NEPA and was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A).

114. Accordingly, the Final EA and FONSI for the Aero CTs Project must be held unlawful and set aside. 5 U.S.C. § 706(2).

Claim Three – Failure to Consider a Reasonable Range of Alternatives to the Aero CTs Project

115. All allegations stated above are incorporated herein by reference.

116. NEPA requires federal agencies to consider a reasonable range of alternatives to their proposed actions whether they prepare an EA or an EIS. 40 C.F.R. §§ 1501.5(c)(2); 1502.14.

117. The statement of purpose and need in an EA or EIS shapes the range of reasonable alternatives. Reasonable alternatives are those that can achieve the purpose and need for the proposed action.

118. An agency may not define the purpose and need for a proposed action in unreasonably narrow terms.

119. An agency may not tier a NEPA document to a non-NEPA document.

120. Where a set of individual alternatives to the proposed action cannot achieve the purpose and need standing alone but can do so in conjunction with one another, an agency may not summarily reject the individual components without considering a composite alternative that

cumulates them.

121. The Final EA does not consider a reasonable range of alternatives because the statement of purpose and need is unreasonably narrow.

122. The Final EA indicates that the purpose and need for the Aero CTs Project is to implement the CT Modernization Study. This purpose and need is unreasonably narrow because it compels the selection of an alternative that involves constructing and operating the Aero CTs.

123. The Final EA cannot satisfy NEPA's alternatives requirements by tiering to the CT Modernization Study because the CT Modernization Study is not a NEPA document.

124. In the alternative, the Final EA indicates that the purpose and need for the Aero CTs Project is to enhance system flexibility, integrate increasing renewable capacity, and provide dispatchable capacity.

125. Under this understanding of the purpose and need for the Aero CTs Project, the Final EA does not consider a reasonable range of alternatives because it refused to consider a carbon-free alternative.

126. In comments, the Sierra Club and other organizations demonstrated that a carbon-free alternative composed of solar, battery storage, and demand response resources can provide the same reliable, cost-effective energy as the Aero CTs Project at a competitive cost and without climate-warming greenhouse gas emissions.

127. Executive Orders 14008 and 14057 establish that a carbon-free alternative is both reasonable and appropriate.

128. The Final EA refused to consider a carbon-free alternative that combined solar, battery storage, and demand response resources. Instead, the Final EA rejected each of these component parts because each could not meet the purpose and need for the Aero CTs Project

standing alone. This refusal to consider a composite alternative violated NEPA.

129. Furthermore, the Final EA's reasons for rejecting the individual components of a carbon-free alternative—especially battery storage—were arbitrary and capricious. TVA acknowledged in the 2019 IRP that battery storage provides a wider operating capacity range than aeroderivative combustion turbines and acknowledged in response to comments on the Draft EA for the Aero CTs Project that “both battery storage and Aero CTs contribute to system flexibility,” and that flexibility increased for both battery storage and Aero CTs as renewable capacity grows.

130. Despite these clear advantages, TVA justified its refusal to evaluate a carbon-free alternative largely on the basis that the overnight capital cost of building battery storage is higher than the cost of building Aero CTs. This justification ignores an important aspect of the problem. The overnight capital cost of building Aero CTs does not include the cost of the gas that they burn. The cost of fuel is an important aspect of the problem when comparing the cost of two technologies, one of which does not require fuel. Furthermore, TVA's least-cost planning mandate requires it to evaluate the costs of utilization, which includes fuel costs.

131. TVA's failure to consider a carbon-free alternative in the Final EA, and TVA's arbitrary dismissal of component parts of a carbon-free alternative, violated NEPA and was “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” 5 U.S.C. § 706(2)(A).

132. Accordingly, the Final EA for the Aero CTs Project must be held unlawful and set aside. 5 U.S.C. § 706(2).

Claim Four – Failure to Prepare an Environmental Impact Statement

133. All allegations stated above are incorporated herein by reference.

134. NEPA requires federal agencies to prepare an EIS for all “major Federal actions significantly affecting the quality of the human environment.” 42 U.S.C. § 4332(C).

135. If there is a substantial possibility that a proposed action *may* have a significant impact on the environment, an EIS is required. *See* 40 C.F.R. § 1508.1(b).

136. TVA’s NEPA regulations provide a list of activities that normally require an EIS, which includes “[t]he construction and operation of major new power generating facilities at sites not previously used for industrial purposes.” 40 C.F.R. § 1318.400(a)(2). This list is not exclusive. Unlisted activities may also require preparation of an EIS.

137. The Aero CTs Project is a major Federal action significantly affecting the quality of the human environment.

138. At a minimum, there is a substantial possibility that the Aero CTs Project—individually or cumulatively with the rest of TVA’s gas buildout—will have significant climate change impacts.

139. The Final EA states that the Aero CTs Project will result in a total increase of 1,141,195 tons of CO₂e emissions each year.

140. Those emissions are over ten times greater than the only available federal benchmark for assessing the significance of greenhouse gas emissions under NEPA. Interim guidance from the Federal Energy Regulatory Commission establishes a rebuttable presumption that projects emitting 100,000 metric tons of CO₂e each year are deemed to have a significant impact on climate change.

141. TVA’s long-term commitment to fossil-based power generation with the Aero CTs Project is highly controversial in light of the climate crisis and federal climate policy. TVA’s approach to evaluating the climate impacts of the Aero CTs Project conflicts with available scientifically supported methodologies and decarbonization goals. The use of these methodologies is specifically required in executive orders setting forth the whole-of-government response to

climate change.

142. TVA's consideration of greenhouse gas emissions, impacts on the climate, emissions mitigation technology, and carbon-free alternatives in the Final EA is likely to establish precedent, or represents a decision in principle, about how TVA will review proposed gas-fired plants under NEPA in the future.

143. By failing to adequately consider its obligations under Executive Orders 13390, 14008, and 14057 related to climate, TVA's decision threatens a violation of federal requirements imposed for the protection of the environment.

144. TVA's decision also is likely to affect public health and safety because of its harmful emissions of both conventional and greenhouse gas pollutants. These emissions, considered alongside other local pollution burdens in Humphreys and Benton counties and the nearly 5,000 megawatts of new gas-fired power plant capacity proposed by TVA, are cumulatively significant.

145. The Final EA relied on a misinterpretation of TVA's own regulations to conclude that an EIS is not required. In particular, TVA asserted in the response-to-comments appendix to the Final EA that an EIS is not required because the Johnsonville Reservation is an existing industrial site and thus outside the scope of 18 C.F.R. § 1318.400(a)(2). However, the list of activities that normally require preparation of an EIS is not exclusive.

146. TVA's decision to issue a FONSI for the Aero CTs Project was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). Accordingly, the FONSI for the Aero CTs Project must be held unlawful and set aside. 5 U.S.C. § 706(2). Furthermore, TVA must be ordered to prepare an EIS for the Aero CTs Project.

PRAYER FOR RELIEF

WHEREFORE, based upon all the allegations contained in the foregoing paragraphs, Plaintiff Sierra Club respectfully requests that the Court:

- a) Enter a declaratory judgment that the EA for the Aero CTs Project violates NEPA and that TVA's decision to issue a FONSI was arbitrary, capricious, and/or not in accordance with law;
- b) Vacate the EA and FONSI for the Aero CTs Project;
- c) Order TVA to prepare an EIS for the Aero CTs Project;
- d) Enjoin further construction and operation of the Aero CTs until TVA has complied with NEPA;
- e) Award Plaintiff Sierra Club the costs of this action, including attorney fees, pursuant to 28 U.S.C. § 2412; and
- f) Grant such other relief as this Court deems just and equitable.

DATE: December 22, 2022

Respectfully submitted,

/s/ Gregory Buppert

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¹ As required by L.R. 83.01(d)(3), Mr. Buppert is a member of the Tennessee bar and has provided his Tennessee Board of Professional Responsibility number.

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